Notice of Allowability	Application No.	Applicant(s)	
	10/631,226	CHIODO, CHRIS D.	
	Examiner	Art Unit	
	Tiffany A. Fetzner	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *11/29/2007 & the telephonic interview of 3/12/2008*.

2. ☐ The allowed claim(s) is/are *Amended claims 16-20, and examiner amended claims 22-37*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☒ to Paper No./Mail Date *4/21/2006*.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *3/13/2008* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with **Attorney Lawernce J. Shurupoff Reg. No. 30,219** on **March 12th 2008** along with authorization to charge any necessary fees to applicant's deposit account.

3. The application has been amended as follows:

A) Insert Amended claims 16 through 20 of the **November 29th 2007** amendment and response:

Claim 16 --- A coil and specimen positioning system **easily** positioning a non-human laboratory specimen in a predetermined position within **a sweet spot of an imaging field in** a bore of an MRI imaging machine and through a bore of a gradient coil located concentrically **about** the bore of the MRI imaging machine, said coil and specimen positioning system comprising:

an integrated coil positioning assembly comprising a first pair of support members insertable within the e bore of the MRI imaging machine and through the bore of the gradient coil, said coil positioning as assembly having an aperture **axially receiving** passage of said **the** specimen **and having a first abutment surface engageable with the MRI imaging machine and a second abutment surface axially locating the specimen in the bore of the MRI imaging machine**;

a specimen positioning assembly comprising a specimen retention device configured to **fix the specimen in position and be insertable** through the aperture **of said integrated coil positioning assembly**, and a second pair of support members insertable within said first pair of support members **on said integrated coil positioning assembly, and a third abutment surface axially locating the specimen in the bore of the imaging machine**; ~~and~~

an **axially-extending** interconnection provided between said first and second pairs of support members, said interconnection locating ~~said~~ **the** specimen positioning assembly concentrically within ~~said~~ **the** bore of ~~said~~ **the** imaging machine and concentrically within the bore of ~~said~~ **the gradient** coil**; and**

wherein axial insertion of said specimen positioning assembly into said integrated coil positioning assembly abuts said second and third abutment surfaces and thereby positions the specimen accurately and repeatably in the sweet spot within the imaging field. **---**

Claim 17 **---** The system of **claim 16**, wherein said ~~sliding~~ interconnection comprises a pair of rods and a pair of grooved rails. **---**

Claim 18 **---** The system of **claim 16**, wherein said ~~sliding~~ interconnection comprises a self-centering interconnection. **---**

Claim 19 **---** The system of **claim 16**, further comprising a mounting member **fixable** to ~~said~~ **the** MRI imaging machine, and wherein said first pair of support members is connected to said mounting member, and wherein said specimen positioning assembly is freely insertable into said mounting member and freely removable therefrom. **---**

Claim 20 **---** The system of **claim 16**, wherein said specimen positioning assembly comprises an ~~engagement member~~ **end plate defining said third abutment surface and** ~~for~~ limiting insertion of said specimen positioning assembly into said MRI imaging machine. **---**

B) Insert Amended claims 22 through 29 of the **November 29th 2007** amendment and response:

Claim 22 **---** A specimen positioning system insertable within an axial bore of an imaging machine having **an imaging field with a sweet spot**, said system **easily, accurately and repeatably positioning a non-human laboratory specimen in the sweet spot**, said system comprising:

a positioning assembly comprising;

at least a first pair of support members insertable within the axial bore of the imaging machine;

a first mounting member coupled to said first pair of support members and having a first abutment surface engageable with the imaging machine such that said positioning assembly is axially, radially and circumferentially positioned with respect to the axial bore of the imaging machine;

a radially-extending second abutment surface provided on said positioning assembly; and

said positioning assembly having an aperture receiving axial passage of the specimen into the axial bore of the imaging machine;

a specimen positioning assembly comprising;

at least a second pair of support members axially movable along said first pair of support members on said positioning assembly;

a retention device provided on said specimen positioning assembly and configured to pass through the aperture of said positioning assembly and secure the specimen in a fixed axial position;

a radially-extending third abutment surface provided on said specimen positioning assembly and engageable with said second abutment surface on said integrated positioning assembly; and

an axially-extending interconnection provided between said first and second pairs of support members, said interconnection locating and

supporting said specimen positioning assembly within the bore of the imaging machine and within the positioning assembly; and

wherein **axial insertion of said specimen positioning assembly through the aperture of said positioning assembly and along said axially-extending interconnection engages said radially-extending second and third abutment surfaces and thereby accurately and repeatably positions the specimen in the sweet spot of the imaging field so as to enable optimum repeatable imaging of the specimen**. **---**

Claim 23 **---**The system of **claim 22**, wherein said first abutment surface comprises a radially-extending flange. **---**

Claim 24 **---**The system of **claim 22**, wherein said specimen positioning assembly further comprises a specimen chamber, and wherein said retention device is located in said specimen chamber. **---**

Claim 25 **---**The system of **claim 22**, wherein said positioning assembly further comprises a gradient coil locator plate axially spaced from said first abutment surface and configured to position a gradient coil within the axial bore of the imaging machine.**---**

Claim 26 **---** The system of **claim 22**, wherein said positioning assembly further comprises a probe coil spacer plate axially spaced from said first abutment surface and configured to position a probe coil within the axial bore of the imaging machine. **---**

Claim 27 --- The system of **claim 22**, wherein said first, second and third abutment surfaces are located at predetermined axial positions upon abutment of said second and third abutment surfaces. ---

Claim 28 --- The system of **claim 22**, wherein said first and second abutment surfaces are located externally of said axial bore. ---

Claim 29 --- The system of **claim 22**, wherein said interconnection comprises a self-centering interconnection. ---

C) Replace claim 30 of the **November 29th 2007** amendment and response with the following **Examiner amended claim 30**:

Claim 30 --- A specimen positioning system **configured** for use with an imaging machine having **a sweet spot within** an imaging field, comprising:

a positioning assembly mountable in a fixed position on said imaging machine;

a specimen positioning assembly removably, accurately and repeatably mountable in a predetermined position against said positioning assembly;

a specimen tube mounted on said specimen positioning assembly, said specimen tube having an internal chamber for holding a specimen;

a specimen retention device provided in said internal chamber and constructed **in order** to hold a specimen in a fixed position within said chamber;

a releasable **self-centering** interconnection provided between said positioning assembly and specimen positioning assembly, wherein movement of said specimen positioning assembly along said **self-centering** interconnection is axially limited at a predetermined axial position such that placement of the specimen positioning assembly

into the positioning assembly along said **self-centering** interconnection up to said predetermined axial position locates the specimen within the **sweet spot of the** imaging field of the imaging machine. **---**

D) Insert Amended claims 31 through 36 of the **November 29th 2007** amendment and response:

Claim 31 **---** The system of **claim 30**, further comprising a fluid fitting on said specimen positioning assembly and in fluid communication with said chamber. **---**

Claim 32 **---** The system of **claim 30**, wherein said specimen positioning assembly further comprises an access door allowing insertion and removal of the specimen into and out of said chamber. **---**

Claim 33 **---** The system of **claim 30**, wherein the specimen retention device comprises ear bars insertable into the specimen's ears. **---**

Claim 34 **---** The system of **claim 30**, wherein said interconnection comprises a sliding interconnection. **---**

Claim 35 **---** The system of **claim 30,** wherein said specimen positioning assembly further comprises an engagement member and wherein said movement of said specimen \ positioning assembly is axially limited by said engagement member. **---**

Claim 36 --- The system of **claim 35**, wherein said positioning system further comprises an engagement surface engageable with said engagement member such that abutment is effected between said engagement member and said engagement surface at said predetermined axial position. ---

E) **Replace claim 37** of the **November 29th 2007** amendment and response with the following **Examiner amended claim 37**:

Claim 37 --- A specimen positioning system **configured** for holding a laboratory specimen within **a sweet spot of** an imaging field ~~in~~ **within** the bore of an imaging machine, comprising:

a positioning assembly fixed in position on the imaging machine, said positioning assembly comprising a boss portion dimensioned **in order** to form a close fit against and within the bore of the imaging machine **in order** to center and support the positioning system against and within the bore of the imaging machine;

a specimen positioning assembly removably mountable ~~to~~ **within** the positioning assembly, said specimen positioning assembly comprising a specimen holder; and ~~an~~ **a self-centering** interconnection provided between said positioning assembly and said specimen positioning assembly and comprising an abutment limiting axial movement of said specimen positioning assembly along said positioning assembly at a predetermined axial location such that a specimen held in said specimen holder is located within the imaging field **sweet spot** when movement of said specimen positioning assembly is limited at said predetermined axial location. ---

In the title:

F) Amend the title as follows:

---Imaging Machine / MRI Positioning assembly for Magnet Coils and specimens at the Sweet Spot of an Imaging Field---

The following is an examiner's statement of **Reasons for Allowance:**

4. With respect to **independent claims 16, 22, 30** and **37**: These claims are considered to be allowable over the prior art of record because the prior art of record neither discloses nor suggests an MRI / Imaging apparatus for specimen positioning, where the specimen positioning assembly is removable, the imaging is precise, accurately repeatable, and where the specimen positioning system successfully positions the specimen within the "sweet spot" of the imaging field, when utilized by an MRI / imaging machine operator. It is the entire combination of the claim limitations with each of the system components set forth and taken as a whole that constitutes both the novelty and non-obviousness of applicant's claims.

5. With respect to **dependent claims 17-20, 23-29,** and **31-36**: These claims are considered to be allowable over the prior art of record because they each depend from an allowable independent claim.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art made of Record

7. The **prior art made of record** and not relied upon is considered pertinent to applicant's disclosure.

A) Mastandrea, Jr. et al., US patent 5,783,943 issued July 21st 1998.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Fetzner whose telephone number is: (571) 272-2241. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm., and on alternate Friday's from 7:00am to 3:30pm.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Diego Gutierrez**, can be reached at (571) 272-2245. The **only official fax**

phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**.

10. Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system Status information for published applications may be obtained from either Private PMR or Public PMR. Status information for unpublished applications is available through Private PMR only. For more information about the PMR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PMR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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March 27, 2008